

REMARKS

Claims 1-21 are pending in the case. All claims stand rejected. Reconsideration is respectfully requested.

In the office action, the Examiner has written that only claims "1-20" are pending and that claims "1-20" are rejected. Applicant notes that there are actually a total of 21 claims in the present application as filed. Applicant has confirmed through the Image File Wrapper of the present application in the PAIR system that the application as filed included 21 claims, that the additional claim fee of \$18 for the additional claim over 20 has been charged, and that the Bibliographic Data Sheet indicates a total of 21 claims in the present application. For the purpose of the present response, Applicant assumes that the listing of claims "1-20" in the office action is merely a typographical error and that claim 21 has indeed been examined together with claims 1-20.

**\$102(e) Rejection based on Kernahan**

Claims 1-12 have been rejected under 35 U.S.C. §102(e) as being anticipated by Kernahan et al. (U.S. Patent 6,801,028, hereinafter "Kernahan"). Applicant respectfully traverses the rejection.

Applicant respectfully submits that Kernahan does not teach or suggest the claimed invention of claims 1-12. More specifically, the Examiner's rejection based on Kernahan is formed by piecing together disjointed, unconnected and unrelated sections of Kernahan which is a 175-page reference including 59 figures. For instance, to account for the elements in claim 1, the Examiner relied on Figures 2, 12 and 59 and text of Kernahan from column 4, 9, 11, 73, 75 and 76. The text and figures referred to by the Examiner describe various, sometimes unrelated, circuitry and circuit operation. The relevant portions of Kernahan referred to by the Examiner in fact do not describe the claimed invention of claims 1-12. More importantly, even when Kernahan is viewed as a whole, Kernahan does not teach or suggest the claimed invention of claims 1-12.

Claim 1 is patentable over Kernahan at least by reciting "a compensation circuit disposed in the feedback control loop, the compensation circuit applying a scaling factor to

the first loop gain, wherein the first loop gain of the feedback control loop is defined by a **first function** describing a the loop gain dependency on the input voltage and the output voltage, and the compensation circuit applies a second function describing the scaling factor wherein the **second function is a reciprocal function of the first function**" (emphasis added). Kernahan describes in general a power converter having a synchronous sampling multiple-output controller. Kernahan does not teach or suggest providing a compensation circuit in a switching regulator where the compensation circuit applies a scaling factor described by a function that is *a reciprocal function* of another function describing the loop gain dependency on the input voltage and the output voltage of the switching regulator.

Claim 1 is therefore patentable over Kernahan. Claims 2-12, dependent upon claim 1, are patentable over Kernahan at least for the same reasons claim 1 is patentable. Withdrawal of the §102(e) rejection of claims 1-12 based on Kernahan is respectfully requested.

**§102(e) Rejection based on Kernahan**

Claims 13-21 have been rejected under 35 U.S.C. §102(b) as being anticipated by Pardoen (U.S. Patent 6,583,609, hereinafter "Pardoen"). Applicant respectfully traverses the rejection.

Pardoen describes detecting the equivalent series resistance (ESR) of an external capacitor to a voltage regulator and adjusting the transfer function of the feedback loop of the voltage regulator to compensate for the ESR. (See Abstract of Pardoen.) The ESR compensation is accomplished by introducing a variable capacitance to introduce a zero to the transfer function. Pardoen also describes adjusting the transfer function of the feedback loop to improve the transient response. (See Abstract of Pardoen.) Specifically, the gain and the position of a pole in the transfer function of the feedback loop may be adjusted to improve the transient response. In col. 6, lines 63-65, of Pardoen, an equation for optimizing the error amplifier gain in order to optimize bandwidth is given as equation (3).

Claim 13 is patentable over Pardoen at least by reciting "a method for providing compensation in a switching regulator...determining a **first function** describing the loop gain dependency on the input voltage and the output voltage; determining a **second function being a reciprocal of the first function**; and applying the second function to a point in the feedback

control loop of the switching regulator" (emphasis added). While Pardoen describes some sort of adjustment to the transfer function of the loop gain to improve the bandwidth of the system, Pardoen does not teach or suggest providing compensation by use of a function that is *a reciprocal function* of another function describing the loop gain dependency on the input voltage and the output voltage of the switching regulator.

Claim 13 is therefore patentable over Pardoen. Claims 14-21, dependent upon claim 13, are patentable over Pardoen at least for the same reasons claim 13 is patentable. Withdrawal of the §102(b) rejection of claims 13-21 based on Pardoen is respectfully requested.

#### CONCLUSION

Claims 1-21 are pending in the present application. For the above reasons, claims 1-21 are patentable over the cited references. Passage of the present case to allowance is respectfully requested. If the Examiner would like to discuss any aspect of this application, the Examiner is invited to contact the undersigned at (408) 382-0480.

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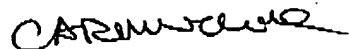


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